

Preventing spills and overfills

Another important part of your responsibility as an owner or operator of a UST system is to ensure that there are no overflows of fuel during a delivery. In this section, you will learn about options, actions, and records for your UST system.

Terms to know in this section

- ☐ Auto shut-off/Flapper valve
- ☐ Ball float valve
- ☐ Overfill alarm
- ☐ Spill bucket



Cleaning up an overfill during delivery can be expensive



Spill Notification



Call

800/482-0777

The sooner you call,
the lower your cleanup costs



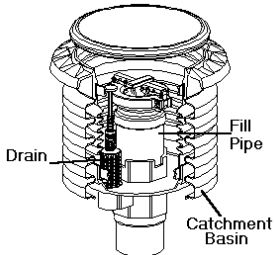
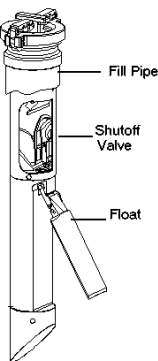
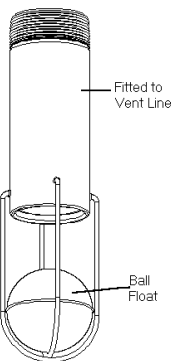
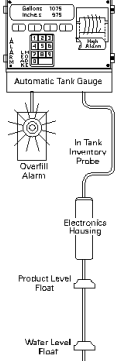
Spills to the ground surface can happen during fuel delivery to your tank, or during vehicle fueling. You must cleanup discharges immediately and document your actions.

UST Options

There are two types of equipment you must have in order to avoid overfills. This equipment is designed to reduce the chance of a spill during fuel deliveries.



Have the right equipment

Spill Containment	Overfill Device (3 options: pick one)		
<p>Spill Bucket Must hold at least 3 gallons</p>  <p>[] Yes I have one</p>	<p>Flapper valve set to restrict flow at 95% full</p>  <p>[] Yes I have one</p>	<p>Ball Float set to shut off flow at 95%</p>  <p>[] Yes I have one</p>	<p>Alarm set to alert at 90% full</p>  <p>[] Yes I have one</p>

UST Actions

Your job is pretty straightforward: Prevent overflows during oil delivery.



Preventing overfills

- ☐ Make sure the fuel level in the tank is measured BEFORE each delivery.
- ☐ Keep your spill buckets clean.
- ☐ Monitor all fuel deliveries.
- ☐ Respond to ALL overfill alarms.

WARNING: DO NOT KEEP YOUR STICK IN THE DROP TUBES. Remove the stick after each time you use it.

- ☐ It can damage the overfill flapper arm.
- ☐ It can prevent the overfill device from working properly.
- ☐ It can cause an overfill.



All spill containment and overfill prevention equipment must be tested each year to make sure the devices are working properly.



What does monitoring deliveries involve?

State law says that the UST owner, operator or oil transporter must be physically present during each delivery. Being inside sipping coffee does not count. This designated person must monitor all product deliveries.

Make sure you designate a person for this responsibility. They must be able to:



- ☐ Know how to figure how much empty space is in the tank before the fuel is added.
- ☐ Be standing at the oil delivery point and watching for problems.
- ☐ Understand what to look for that might indicate a possible overfill event.
- ☐ Know what to do if you see or hear an alarm.
- ☐ Know what to do in the event of a spill.
- ☐ Know who to call for help.



Problems with Overfill devices

Flapper Valve

- ☐ Float can stick.
- ☐ Wooden stick inserted in drop tube.

Ball Floats

- ☐ Float cage rusts, ball falls out.
- ☐ Not all tank openings seal tight.

Alarms

- ☐ If an overfill high-level alarm goes off too many times, an operator may start ignoring it.
- ☐ Alarm disconnected.
- ☐ No one knows what to do when they hear alarm.

If you have an overfill alarm, that alarm must be tested annually to make sure it works, and those responsible can hear or see it.



Spill Bucket “Musts”



The spill containment bucket:

- ☐ must be kept free of water and debris.
- ☐ must be cleaned of oil after each delivery.
- ☐ must be able to hold at least 3 gallons of liquid.



Fred owns a gas station with two tanks. Each tank receives a delivery every week. During the summer rains, water fills up his spill bucket. He knows this because he sometimes gets a small flood of oily water near his island. Not only could an inspector fine Fred for not having a functioning spill bucket, but pollution is moving off-site as well.



Problems with spill buckets

- ☐ Cracks in lid allowing in water.
- ☐ Letting water (or oil) accumulate in the bottom.
- ☐ Cracks or holes in the side or walls of spill bucket.
- ☐ Drain plug malfunctioning or broken.



Record keeping for spill and overfill requirements simply means keeping a record of any overfills. Keep them in a log and available for inspection.

Example of Oil Spill Log

Date discharge discovered	Source of discharge	Location of discharge at facility	Date of cleanup	Method of cleanup	Signature of owner manager
5/5/03 3:30 PM	Customer filling up vehicle	Gasoline dispenser #2	5/5/03	Soaked up with kitty litter	Bob Jones

For a blank Oil Spill Log, go to the next page.



Paperwork reduction. You do not need to report a small spill (10 gallons or less) if you promptly clean it up and log the action using an Oil Spill Log like the one above.

It happened in Maine

A new convenience store was built in southern Maine in 1998. The new tanks and piping had double wall systems with a continuous electronic monitoring system. But a year later, MTBE, a gasoline additive, was found in two nearby public water supply wells. How was the fuel leaving the system? DEP later learned that the owner ordered more product from the supplier than the tanks could hold. This happened more than once. He didn't know exactly how big the tanks were. So when the delivery driver found that the tank was full, he tried, unsuccessfully, to quickly switch the hose full of product over to another tank. You can imagine the results. The facility owner and operator failed to report or maintain a record of the spills, as required by state law. It has cost over \$800,000 to clean up the MTBE contamination and to ensure that the public water supply for a major population area is adequately protected. Each tank had ball float valves for overfill prevention.

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(PHOTOCOPY THIS PAGE AND KEEP EXTRAS ON-SITE)



State of Maine Oil Spill Log

For spills less than 10 gallons, you do not need to report the incident to DEP if you fill out this log.

Date discharge discovered	Source of discharge	Location of discharge at facility	Date of cleanup	Method of cleanup	Signature of owner/manager

KEEP THIS LOG AVAILABLE FOR INSPECTION.

Reducing corrosion

Corrosion of underground steel is a serious problem in Maine. Without maintaining certain types of equipment, your tank and piping can rust out, causing a leak. In this section, you will learn about options, actions, and records for your UST system.



Terms to know in this section

- ☐ Cathodic protection
- ☐ Cathodic protection tester
- ☐ Corrosion
- ☐ Impressed current
- ☐ Galvanic potential

Cathodic
Protection

What exactly is corrosion?

Your buried steel tank has electrical energy inside the metal. This energy was added at the steel plant when raw iron ore was bombarded with high temperature heat, converted ore into steel. Once buried, the pent-up energy in the steel will try to escape if allowed. When the energy does escape, it's called corrosion.

If the outer surface of an unprotected steel tank was damaged by a backhoe during installation, a pinpoint spot would form, allowing energy to drain out of the metal. That's how rust starts.



Modern day steel tanks come equipped with special corrosion control devices in place to stop corrosion, but this equipment must be tested to make sure it still works.



You have a few options for protecting your underground tank from corrosion.

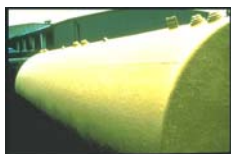
Which do you have?

Tanks

☐ Fiberglass tank



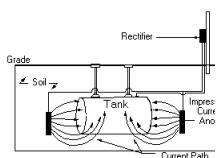
☐ Fiberglass clad steel tank



☐ Steel tank with factory cathodic protection (STIp3)

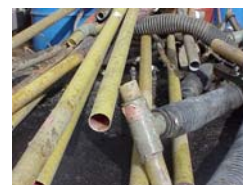


☐ Steel tank with impressed current



Piping

☐ Fiberglass product piping



☐ Flexible plastic product piping



☐ Non-metal and/or cathodically protected vent piping



Not sure?
Call DEP at
207/287-2651



The main thing you need to do as an operator is to ensure that your tank is protected from corrosion.



Corrosion Protection Checklist

Check the type of tank and piping that applies to your system. Note the necessary action and timeline.

<u>Tank</u>	<u>Type</u>	<u>Action</u>	<u>Timeline</u>
[]	Fiberglass	None	None
[]	Fiberglass-clad steel (double-wall)	None	None
[]	Steel with factory cathodic protection (STIp3)	Test system	Annually
[]	Steel with impressed current	1. Test system 2. Check rectifier	1. Annually 2. Every 30 days
<u>Piping*</u>	<u>Type</u>	<u>Action</u>	<u>Timeline</u>
[]	Fiberglass	None	None
[]	Flexible plastic	None	None
[]	Cathodically protected steel	Test system	Annually

* Including vent pipe

Question: How do I get my tank and piping tested for corrosion?

Answer: The person performing the annual inspection will do it.



What is a passing grade?

If you have a steel tank, you must prove the tank is putting out enough electrical current to overcome the metal's naturally occurring desire to rust.

A corrosion test is a measurement of this electricity of the tank.

If the tank puts out an adequate level of electricity, corrosion is not occurring. Otherwise, your tank is probably rusting.

For most steel tank systems, an adequate level of current is about 8/10 of a volt, or 0.850 volts to be precise.



Pass or Fail?

-1.100v	Pass
-1.000v	Pass
-0.900v	Pass
-0.850v	Pass
-0.800v	Fail
-0.700v	Fail
-0.600v	Fail
-0.500v	Fail



Is your tank older than 15 years?

Many steel tanks of this age have been replaced as a result of corrosion. Contact a CTI or a Corrosion expert to investigate failing corrosion protection. Remember: corrosion protection only prevents corrosion if it is maintained. If the voltage readings are consistently failing (less than -0.850 volts), the tank is not adequately protected from corrosion, nor will it pass the annual inspection. If it cannot be fixed the tank must be removed.



Corrosion protection records must be kept where an inspector can review them. You must keep:

- ☐ A copy of the last three years of annual cathodic protection test results.
- ☐ A copy of the impressed current log with 30-day readings (uncommon: impressed current only).

Stopping vapor loss

When gasoline is pumped into your underground tank, a certain amount of petroleum can be lost through vapors. Stage I vapor recovery is used to reduce those emissions.

Stage I vapor recovery means that vapors in the tank, which are displaced by the incoming gasoline, are routed through a hose into the cargo tanker, instead of being vented to the atmosphere.

This saves money and cuts down on air pollution.

In this section you will learn about options, actions, and records.

Terms to know in this section

- ☐ Coaxial system
- ☐ Two-point/manifolded system
- ☐ Stage I vapor recovery
- ☐ Stage II vapor recovery

Vapor recovery only applies to tanks that contain gasoline, not diesel.



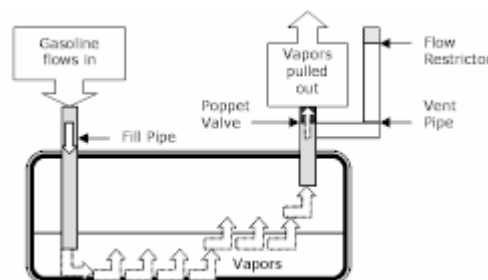
Stage I vapor recovery applies to you if the throughput of your tank system is greater than 10,000 gallons per month. Most fueling stations in Maine meet this throughput level.



There are two types of vapor recovery systems common in Maine. Which type do you have?

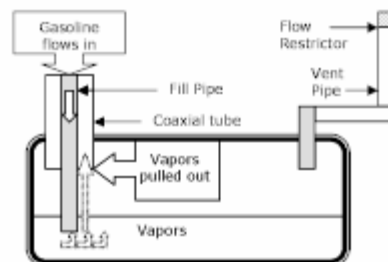
Option 1.

Two-Point/Manifolded Systems have two separate tank openings, one for delivery of the product and the other for the release of vapors.



Option 2

Coaxial System have one tank opening that is double-walled. Fuel flows through the inside tube while vapors return in the space between the inner and outer tubes.



UST Actions

The inspector will check the vapor recovery equipment once a year to make sure it is working properly.

For two-point systems, look for two hoses during each delivery: Make sure that the driver connects the return hose from the tank back to the tanker truck before each delivery. This must happen each time you receive gasoline.



UST Records

Throughput Records and Annual Inspection: Keep your records of your throughput (gallons dispensed) and your annual vapor recovery inspection.

- ☐ Keep copies on-site for the past one year.
- ☐ Keep copies maintained somewhere safe and readily available for the last three years.



Stage II vapor recovery Certain gasoline tanks require additional vapor recovery equipment, called Stage II. Stage II means you recover vapor from the dispenser nozzle too. Stage II applies to you if:

- ☐ the tank is located in York, Cumberland or Sagadahoc counties and
- ☐ the annual throughput exceeds one million gallons.

(This only applies to about 100 facilities in Maine.)

Preventing accidents at the pump

Accidents can and do happen at gas stations. Nearly all are preventable. In this section you will learn about requirements that can minimize the possibility of fire, explosion and loss of life.



Terms to know in this section

- ☐ Crash valve
- ☐ Dispenser
- ☐ Nozzle or Hose

UST Options

Under each fueling dispenser you must have a device called a crash valve. The purpose of the crash valve is to shut off the flow of fuel to the dispenser nozzle if the dispenser is struck and damaged. A crash valve is pictured in the photo on the right.

Crash valves are only needed on UST systems with pressurized piping.



UST Actions

The crash valve must be checked annually to make sure it is functioning properly. Have a trained professional do this.

UST Records

Keep a record that shows the crash valve was inspected by a trained professional. Note if the device was replaced and why.

